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Product Data Sheet: ELKNST361121206C

*Fast*Koat® *ST-361 Converting Magnesium-Aluminum Alloys*

– to upgrade the corrosion resistance efficiently and ecologically

Characteristics:

1. Excellent corrosion resistance.
2. Excellent coatability.
3. Chrome & heavy metal-free, conforming to RoHS & VOC regulations.
4. Easy to use.

Description:

Tradition

Conventionally magnesium-aluminum alloys are converted with chromates, in order to improve their corrosion resistance. However, for recent decades, the toxicities and environmental concerns of chromates have driven the shift to phosphating, despite at the expense of corrosion performance. Lately, furthermore, the wastewater problems related to phosphate disposal have raised public attention and, the public policy pressure of using phosphates is to be escalated.

What we can do

***Fast*Koat® ST-361** is an excellent alternative to phosphating or chromates, in which it is environmentally benign and conforms to any stringent regulations, such as RoHS and VOC. In details, ***Fast*Koat® ST-361** is a water-borne solution of organo-inorganic complexes, containing no toxic, volatile, or hazardous ingredients.

More important, ***Fast*Koat® ST-361** outperforms phospates with respect to the corrosion resistance, when used onto magnesium-aluminum alloys. ***Fast*Koat® ST-361** can be applied, usually in diluted form, onto alloy substrates, in a conventional way preferably by dipping, The treated alloys are to be rinsed thoroughly with water, before they are subjected to oven curing, to enhance the cross-linking. A film of less than one micron thickness would therefore be developed, which shows slight, if there is any, shade change, and helps defend efficiently the alloy substrates against corrosion. With this effective protection, a primer coat may be spared and color coats can be directly applied thereafter.

How to do it

In practical applications, the alloy substrates to be treated must be kept

clean, fresh and stain-free, usually by degreasing and polishing mechanically or chemically to remove oxidized layers, followed by rinse thoroughly with water. When the clean alloy substrates are immersed in pre-diluted ***Fast***Koat® **ST-361** solution for 10 ~ 60 seconds*, they have to be taken out and rinsed immediately with water, followed by setting or dewatering, to remove excess water, before the final curing at 100°C x 20 minutes or 120°C x 5 minutes is implemented.

As to the actual concentration of ***Fast***Koat® **ST-361** required for practical applications, it is highly recommended to run the preliminary tests in lab. To begin with, we suggest to use the 1/10 diluted solution of ***Fast***Koat® **ST-361** with pure water as the initial concentration, and run the test according to the above-mentioned procedure, to determine its corrosion resistance by salt spray test (ASTM B117 or equivalent). The experimental results can be checked with the target value, so that back-and-forth adjustments of concentrations can be done, until a satisfactory performance is achieved.

*As a guideline, the duration of immersion can be estimated by observing the start of bubbling on the surfaces of alloy work pieces in the diluted ***Fast***Koat® **ST-361** solution. In other words, when the work pieces are immersed and once bubbling starts, they can be removed immediately. Too short or too long dipping may not serve the best purpose.

Specifications:

Appearance:	Aqueous light amber, translucent solution
Chemical Type:	Special organo-inorganic complexes
Active ingredient, 25°C:	25 ± 1%
Specific gravity, g/ml, 25°C:	1.05 ± 0.05
pH Value:	7.5 ± 0.5

Suggestions of Use:

Note: Despite ***Fast***Koat® **ST-361** contains no toxic, volatile or hazardous ingredients, the general precautionary safety measures, such as goggles and gloves, are still required, when handling ***Fast***Koat® **ST-361**, to avoid contact with skin and eyes. Once contacted by accident, thorough rinse with water immediately is suggested.

1. Preparation: To avoid any potential contamination, the magnesium-aluminum alloy pieces should be degreased, polished, and rinsed with water thoroughly before contact with the diluted ***Fast***Koat® **ST-361** solution. To prepare the proper concentration of ***Fast***Koat® **ST-361** for ready applications, Dilute ***Fast***Koat® **ST-361** with proper amount of deionized

water or pure water at room temperature in a holding tank, preferably of plastic or stainless steel type.

2. In Use: Closely monitor and control the pH value of diluted ***Fast***Koat® **ST-361** solution on-line in the range of 6~8, and its non-volatile within 10% of its initially prepared concentration.

3. Cleaning: All the containers and equipments used for ***Fast***Koat® **ST-361** can be easily cleaned with water, if they are cleaned immediately after use.

Surggestions of Storage:

Unused, Sealed ***Fast***Koat® **ST-361** in original container is guaranteed with pot life of six months as minimal, if it is stored in a cool, well-ventilated area and avoid any direct exposure to sunlight.

For those open, untempered ***Fast***Koat® **ST-361** in original containers, we suggest them sealed immediately after use, and use up within three months.

For those used, but lef-over ***Fast***Koat® **ST-361**, due to line-break-down, line-off, or whatever reasons, we suggest them sealed immediately, to minimize any contamination and use-up within seven days.

Packages:

FastKoat® **ST-361** is supplied in two forms of packages, namely, 20 kilograms in plastic pails and 200 kilograms in plastic drums.